

# All Natural Sunscreen Lotion

Cross Reference to Related Applications (none)

Statement Regarding Fed sponsored R & D (none)

## Field of the Invention

The invention relates to compositions, which provide dual Protection for the human skin against the damaging effects of UVA and UVB radiation. The protection encompasses: 1) UV reflection by mineral pigments and 2) cell protection by scavenging of UV induced unstable free radicals. In particular, the invention relates to all natural, absolutely **chemical free** products which act synergistically as an effective UVB/UVA reflector (Mineral Pigments), UVA absorber and superior free radical trap (Melanin) and cell protector against erythema and inflammation (Green Tea) in such compositions.

## Background of the Invention

The skin is the most environmentally-stressed organ in human beings. Not only is the skin subjected to toxic chemicals and hostile environments, but it also is the only organ directly exposed to ultraviolet "UV" light in the presence of oxygen.

It has now been well established that long-term exposure to the sun increases the risk of a number of undesirable skin conditions. Not only has solar radiation been implicated as a causative agent of a number of skin cancers. It has also been shown to accelerate the aging process.

While it seems well established that excessive sun exposure will produce serious skin damage and increase the risks for certain skin cancers. The effects of overexposure to the, resulting specifically from UV radiation, resulting from short-term effects from UVB radiation, such as erythema (sunburn) to long-term effects

from UVB causing premature skin aging and skin cancer.

On the other hand, it is known that we need some minimum amount of sunlight to maintain good health and a positive mental state. Sunlight produces vitamin D in the skin which is absolutely necessary for the efficient absorption of calcium and phosphate for strong bone reformation. Most of this is obtained primarily through synthesis by UVB radiation in the skin.

### **Summary of the Invention**

The present invention relates to a sunscreen composition comprising as its active components, in synergistically effective amounts, 1) biological **Melanin Extract** 2) **Green Tea Extract** from the tea plant *Camellia Oleifera* or *Camellia Sinensis* with Polyphenol contents of greater than 40%, and 3) **Titanium Dioxide** in the amount of 2% - 10% and/or **Zinc Oxide**. It has been found that when adding (Bio) Melanin Extract and Green Tea Extract, in relative small quantities, to a traditional sunscreen (Titanium Dioxide or Zinc Oxide), the combination modestly boosts the SPF by about 3 units but it provides unexpectedly high UVA protection. The content of about 1% of Melanin leads to an unexpected UVA protection, i.e. Phototoxic Protection Factor (PPF) of about 6 and will generate a pleasant immediate tan (Immediate pigment Darkening).

### **Detailed Description of the Invention**

All ingredients of the present composition are all **Natural** and **Non-chemical** in that they are found in naturally occurring material and are routinely prepared from such materials or are readily purchased from commercial sources. For example, (Bio) Melanin is found in a number of different plants and fish extracts. It is found in the fruits of the date palm (phytomelanin) and the common cuttle fish (eumelanin). A description of the methods for the preparation of Melanin

Extract is available from Mel Co R.

For the purpose of this invention, it is important that the composition contains typically 1 % of Melanin to achieve the desired UVA protection. It is known that **Green Tea** is high in polyphenolic antioxidants which are effective in reducing erythema response both to UVA and to UVB radiation.

For the purpose of this invention, it is important that the polyphenols content of the Green Tea Extracts should be 40%, more preferably at 50% and more. The effective amount of Titanium Oxide or Zinc Oxide, the particles in a non-surface treated form (no aluminum stearate, no aluminum hydroxide and no silica) in order to keep the formula **All Natural and Chemical Free**. The effective amount of TiO<sub>2</sub> and ZnO should preferably not exceed 8% by weight in order to control the whitening effect.

Adding Green Tea and (Bio) Melanin increases the SPF by 2 to 4 units. With the combination of this invention, an SPF of 18 to 20 can be achieved using only natural ingredients

Titanium Dioxide and Zinc Oxide are widely known as powerful (physical) UV reflectors in the UVB spectrum but are less efficient in the UVA area. Short-wave solar rays (UVB) are more potent in producing sunburn and are considered the main cause of basal and squamous cell carcinomas.

The long-wave solar rays (UVA) penetrate the skin more deeply and are considered the chief culprit behind wrinkling, leathering and other aspects of photoaging. The latest studies show that UVA not only increases UVB's cancer causing effects, but also may directly cause some skin cancers, including melanomas.

It is the main purpose of this invention to provide a solution to boost the protection against the damaging of UVA radiation in an **all natural** way beside maintaining the high level of protection against UVB rays.

Adding only 1% of (Bio) Melanin leads to an unsurpassed UVA protection of about 6 PPF (Phototoxic Protection Factor) and to a pleasant immediate tan i.e.

acceleration of the body's own melanin production.

It is further a purpose of this invention to demonstrate that it is more beneficial to the human body to topically apply such an All Natural sunscreen formula with an SPF 18 and a 95% UVB protection than go higher with adding chemical ingredients and reaching only 3% more. Recent in vitro and in vivo studies show the growing concern regarding side effects (skin cancer, strong estrogenic activity) caused by chemical ingredients in sunscreen products. The following illustrates a sunscreen formulation comprised of the components of the invention.

Ingredients	INCI Name	% by weight
Water	Aqua	38.0
Sunflower Oil	Sunflower ( <i>Helianthus Annuus</i> ) Seed Oil	10.0
Vegetable Glycerin	Glycerin	8.5
Titanium Dioxide	Titanium Dioxide	7.5
Green Tea Extract	Green Tea ( <i>Camellia Oleifera</i> ) Extract	6.0
Sweet Almond Oil	Sweet Almond ( <i>prunus dulcis</i> ) Oil	4.0
Coconut Oil	Coconut ( <i>Coco Nucifera</i> ) Oil	4.0
Jojoba Oil	Jojoba ( <i>Buxus Chinesis</i> ) Oil	3.5
Vitamin E Oil	Tocopherol	3.5
Cocoa Butter	Cocoa ( <i>Theobroma Cacao</i> ) Butter	3.0
Orange Blossom Oil	Orange Blossom ( <i>Citrus Aurantium</i> ) Oil	2.5
Rice Bran Oil	Rice Bran ( <i>Oryza Sativa</i> ) Oil	2.0
Lanolin Oil	Lanolin Oil	1.5
Xanthan Gum	Xanthan Gum	1.5
Sodium Hydroxymethylglycinate	Glycino Amino Acid	1.0
Lecithin	Lecithin	1.0
(Bio) Melanin	Melanin	1.0
Eucalyptus Citriodora Oil	Eucalyptus Citriodora Oil	1.0
Vitamin B2	Riboflavin	0.5

**What I claim is:**